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Safe Patient Handling & No Lift Policy: Reducing The Incidence Of Work-Related Injuries Among Nursing Staff

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Prospectus: Safe Patient Handling & No Lift Policy

To Reduce The Incidence Of Work-Related Injuries Among Nursing Staff

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Abstract

Background: Patient handling is a major risk factor for work-related injuries among nurses. Inadequate and inappropriate safe patient handling practices contribute to increased work-related injuries, lost/restricted work days, and hospital costs.

Purpose: The focus of this study was to increase the use of mechanical lift equipment and Lift Team to reduce the incidence of work-related injuries among nursing staff involved in patient handling activities on the Medical-Cardiac IICU.

Methodology: The theoretical framework employed for this project was Lippitt's change theory. Pre-and post-survey self-report evaluations were conducted prior to and following the implementation of the Bedside Mobility Assessment Tool (BMAT) and unit specific Equipment Options Tool to measure the effectiveness of the intervention.

Results: A comparison of the pre- and post- survey RN results indicated that the greatest percent change (>10%) increase included: understanding that injuries can be avoided with proper lifting and transferring of patients (18.3%), utilization of patient lifting and transferring devices whenever possible (14.6%), understanding how to select appropriate lifting equipment based on patient assessment (18.3%), understanding how to utilize patient lifting and transferring devices (11.9%), and belief that coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff (40.5%).

Conclusion: The BMAT and unit specific Equipment Options Tool increased the use of mechanical lift equipment among nursing staff, and thus decreased the risk of work-related injuries. Future evaluation will indicate an increased utilization of lift equipment and team, and a sustained decrease in reported injuries, number of lost/restricted work days, and hospital costs related to patient handling activities.

Statement of the Problem

Patient handling is a major risk factor for work-related injuries among nurses. In health care settings, patient handling tasks such as transferring, turning, and re-positioning patients, results in excessive physical force that can lead to injury (Campo et al., 2013). Historically, nurses have relied on "body mechanics" to prevent work-related injury when transferring patients or assisting them to move. This traditional approach was based on the belief that correct body positioning would protect nursing staff from the force of lifting and transporting patients (Ignatavicius & Workman, 2013). In addition, "inadequate and inappropriate safe patient handling practices has been recognized as a key contributing factor to complications of reduced mobility, including hospital acquired pressure ulcers (HAPUs), repetitive motion injuries, and the development of pain amongst immobile patients" (Ganguly, K. & Abrams, G.M., 2012). Moreover, the current patient population is increasingly bariatric, older, and high-acuity, thus contributing to the increasing numbers of dependent patients, relative to nursing staff levels. As a result, heavy lifting and dependent transfers by hospital staff members have resulted in an increased incidence of work-related injuries, specifically chronic back injuries, which can be prevented.

As a response to high rates of injuries of health care providers and patient complications related to immobility, The Nurse and Health Care Worker Protection Act of 2013 was introduced and designed to decrease the potential for injury to health care personnel and patients, while reducing work-related health care costs and improving the safety of patient care delivery (H.R. 2480-113th Congress, 2013-2014). This legislation enactment required OSHA to develop and implement a safe patient handling and mobility standard that will eliminate manual lifting of patients by direct-care RNs and health care workers. As a result, evidence-based research has

indicated that safe patient handling programs reduce the risk of injury for both healthcare workers and patients while improving the quality of patient care (OSHA, 2013).

Moreover, utilization of lift equipment is essential to a successful safe patient handling program and has been shown to reduce exposure to manual lifting injuries by up to 95% (OSHA, 2013). In addition to reducing healthcare worker injuries and related lost work time, safe patient handling programs and utilization of mechanical lift equipment have additional benefits, including: more satisfying work environment; improved nursing recruitment and retention; increased patient satisfaction and comfort; decreased patient falls and hospital-acquired pressure ulcers; and reduced costs associated with injuries. Thus, the focus of this study is to increase the use of mechanical lift equipment and Lift Team to reduce the incidence of work-related musculoskeletal injuries among staff members involved in patient handling activities. Based on empirical observation, it is evident that there is an underutilization of mechanical lift equipment and/or Lift Team among nursing staff on the Medical/Cardiac IICU.

Rationale

A gap analysis was conducted on the Medical-Cardiac IICU to determine how to increase the use of mechanical lift equipment and Lift Team and reduce the incidence of work-related injuries among nursing staff. Although the Medical-Cardiac IICU had zero reported injuries and lost/restricted work days during the most recent hospital wide quarterly Safe Patient Handling Injury Report, it has been reported that several nursing staff have been injured resulting in lost/restricted work days and ultimate hospital cost losses over the past couple of years related to patient handling tasks. On a hospital wide level, the most recent quarterly FY2014 Safe Patient Handling Injury Report indicated that there have been a total of 47 injuries, 991 lost work days, 1,531 restricted work days, and an estimated $1.1 million ultimate hospital losses related to

patient handling injuries (See Appendix A [Table 1-3] for FY2014 Hospital Wide Nursing Cost Center Safe Patient Handling Injury Report). The underutilization of mechanical lift equipment and team, as well as inadequate safe patient handling practices were identified as key factors that severely effect work-related injuries among nursing staff. As a result, the implementation of a validated standardized Bedside Mobility Assessment Tool (BMAT) will help "identify the safe patient handling mobility (SPHM) technology needed to ensure safe patient handling activities while taking the guesswork and uncertainty out of deciding which SPHM technology is right for which patient, and allow nursing staff to take a more active role in assessing and managing patient mobility" (Boynton, T. et al., 2014). Moreover, it is important that a validated Bedside Mobility Assessment Tool be implemented on the Medical-Cardiac IICU in order to increase the use of mechanical lift equipment and team, as well as sustain a decrease in work related injuries, lost/restricted work days, and hospital costs related to patient handling activities.

Literature Review

Work-related injuries are increasing among health care providers and are related to a multitude of factors, including repetitive tasks related to patient handling, the aging of the nursing workforce, higher patient acuity levels, and an increased prevalence of obesity in patients, as well as limited workspaces in patient rooms (Hunter, Branson, Davenport, 2010). In addition, an estimated 12% of nurses leave the profession annually because of back injuries, 38% of nurses who suffer from back pain are placed on workers compensation, and more than 52% of nurses complain of chronic back pain and injuries (Hunter, et al., 2010). Another 20% of nurses choose to transfer to a different unit due to injury (Hunter et al., 2010). According to the Occupational Safety and Health Administration (OSHA), costs associated with work-related injuries in the health care industry are estimated to be $20 billion annually (OSHA, 2013). In

fact, health care workers experience some of the highest rates of non-fatal occupational injuries and illnesses of any industry sector. In 2012, nurses ranked fifth among all occupations for highest incidence rates of MSDs resulting in days away from work, with 11,610 total cases; nursing assistants reported 23,390 cases-the second highest of all occupations (Bureau of Labor Statistics, 2013).

The development of assistive patient handling equipment and devices has rendered the act of strict "manual" patient handling unnecessary as a function of nursing care (American Nurses Association [ANA], 2014). In addition, a growing number of health care facilities have incorporated patient handling technology and have reported positive results. Injuries among nursing staffs have dramatically decreased since implementing patient handling equipment and devices along with an institutional commitment to safe patient handling practices (ANA, 2014).

However, healthcare units that continue to remain at high risk for back and other injuries to caregivers have certain characteristics: "history of frequent injuries, high proportion of dependent patients, lack of use of lifting equipment in good repair, and low staffing levels" (Hunter, et al., 2010). The high physical demands associated with handling and moving patients are likely the largest contributing factor to high rates of injuries among practicing nurses (Hunter et al., 2010). Also contributing to the negative health consequences of manual handling is the shortage of nurses – Peter Buerhaus, a researcher at Vanderbilt University Medical Center, has estimated that there will be a shortage of 285,000 nurses by year 2020 and 500,000 by the year 2050 in the U.S. – likely resulting in longer work hours and more demanding schedules for practicing nurses (Hunter et al., 2010). Furthermore, California added section 6403.5 to the Labor Code of the existing law, the *California Occupational Safety and Health Act of 1973* (effective 2012), that mandates employers to provide safety devices and safeguards necessary to

ensure the safety of employees, including a safe patient handling policy, replacing manual lifting devices and use of lift teams (ANA, 2014). This evidence indicates that adoption of safe patient handling (SPH) techniques, where nurses utilize assistive equipment during transfers, is effective in reducing the incidence of injuries related to patient handling activities.

According to the Occupational Safety and Health Administration (OSHA), "almost all successful injury and illness prevention programs include six core elements: (1) management leadership, (2) employee participation, (3) hazard identification and assessment, (4) hazard prevention and control, (5) education and training, and (6) system evaluation and improvement" (OSHA, 2014). Research shows that initiatives aimed at increasing management involvement can lead to measureable and dramatic improvements in safety and health activities overall (LaMontagne, A., et al., 2004). Management commitment leads to "better worker safety and health, less hazardous working conditions, lower workers' compensation, improved productivity and efficiency, enhanced employee morale, and reduced turnover" (OSHA, 2014). Furthermore, encouraging employees to participate in safe patient handling policies and procedures, involving employees in all aspects of the safety and health management system, and removing barriers to participation, will contribute to the success of safe patient handling and reduce the incidence of work-related injuries.

Root Cause Analysis

A root cause analysis was performed using an Ishikawa diagram to determine the components contributing to insufficient use of lift equipment and Lift Team, and incidence of work-related injuries among nursing staff on the Medical-Cardiac IICU (See Appendix B). The six major causes analyzed included People, Education, Time, Lift Team, Environment, and Equipment. The major themes that emerged from the analysis under the people heading were as

follows: RNs/NAs not confident utilizing lift equipment, belief that manual lifting is easier/faster, and failure to anticipate mobility needs of patients. An analysis of the education heading revealed nursing staff unfamiliar with safe patient handling policy, ineffective training on proper use of lift equipment, and nursing staff not up to date on evidence based practice regarding safe patient handling. Causes identified under the time heading included belief that utilizing lift equipment takes a significant amount of time, patients needing immediate mobility assistance, time constraints, heavy workload, and belief that utilizing the Lift Team takes a significant amount of time. The factors contributing to equipment included uncertainty as to which types of lift equipment to utilize and improper use of lift equipment. The analysis of the environment heading revealed inaccessibility of lift equipment (i.e. location of equipment at the end of the halls), lift equipment and/or devices not readily available, and size of the room too small to utilize lift equipment. Lastly, the Lift Team heading revealed that the Lift Team is frequently unavailable, the Lift Team has pre-determined schedules, and there is a misunderstanding amongst the nursing staff in regards to the role of the Lift Team.

Cost Analysis

The implementation of a validated Bedside Mobility Assessment Tool on the Medical-Cardiac IICU into daily practice by nursing services personnel will result in a significant financial gain with minimal implementation costs. According to the most recent Bureau of Labor Statistics data, workers in hospitals suffer injuries and illnesses at nearly twice the national average rate (OSHA, 2013). In addition, according to one large national survey drawn from 53 healthcare systems with roughly 1,000 hospitals in all 50 states, patient handling injuries accounted for 25 percent of all workers' compensation claims for the healthcare industry in 2011 (OSHA, 2013). On average, a workers' compensation claim related to patient handling cost

$15,600, and wage replacement accounted for the largest share of this cost ($12,000) (OSHA, 2013). Moreover, in terms of wage replacement, patient handling injuries are among the most expensive type of hospital worker injuries (OSHA, 2013).

In addition to these direct and visible costs, there are numerous indirect and less visible costs from patient handling injuries that negatively impact hospital finances. Such indirect costs include employee training, staff turnover, overtime, incident investigation, time, and productivity (OSHA, 2013). In addition to staff related indirect costs, patient safety, satisfaction, and recovery times may also be affected if workers are injured during patient handling and repositioning. These indirect costs can increase the total cost of patient handling injuries by two to four times (OSHA, 2013). A number of studies have estimated the cost of replacing a nurse who leaves the profession due to a musculoskeletal injury, factoring in costs associated with separation, recruiting, hiring, productivity, loss, and orientation and training. These studies have estimated these costs in the range of $27,000 to $103,000 per nurse (OSHA, 2013).

Hospitals who have implemented and sustained safe patient handling equipment utilization, lift teams and training for staff have shown significant decrease in the number of employee injuries, lost work days from injuries, and a substantial reduction in their costs associated with patient handling injuries. For example, “statistically significant reductions in both frequency and severity of injuries were seen after 31 rural community hospitals in Washington implemented a “zero lift program” that replaced manual lifting, transferring and repositioning of patients with mechanical lifting or use of other patient assist devices” (OSHA, 2013). In addition, Tampa General Hospital in Florida reduced its patient handling injury rates by 65 percent after establishing lift teams to perform patient transfers and repositioning tasks (OSHA, 2013). The cost benefit analysis from the literature demonstrates a clear correlation

between implementing and sustaining safe patient handling initiatives and the reduced incidence of nursing staff injuries, as well as decreased workers' compensation, decreased lost work days, and decreased turn over which ultimately results in healthcare savings.

Therefore, the implications of implementing a validated Bedside Mobility Assessment Tool include more standardized assessment and decision making, more consistent and appropriate use of safe patient handling equipment, and increased awareness of a patient's mobility status (Boynton, T. et al., 2014). Furthermore, the implementation of this initiative on the Medical-Cardiac IICU will increase the use of mechanical lift equipment and team, decrease work related injuries (including lost/restricted work days), and increase hospital cost savings.

Project Overview

The "Safe Patient Handling and No Lift Policy" project began with a pre-survey self-report evaluation (See Appendix C for Safe Patient Handling Pre-Survey Likert Scale) to assess the need for safe patient handling quality improvement on the Medical-Cardiac IICU. The pre-survey questions evaluated the nursing staff's perception on safe patient handling techniques, work-related injuries, and utilization of patient lifting/transferring devices and Lift Team. In addition, each nursing staff was able to identify any barriers that prevented them from utilizing the lift equipment and Lift Team.

The primary goal of the "Safe Patient Handling and No Lift Policy" quality improvement initiative is to increase the use of mechanical lift equipment and Lift Team on the Medical-Cardiac IICU. The secondary goals of the study is to implement a standardized Bedside Mobility Assessment Tool (BMAT) for nurses to improve safe patient handling practices and appropriate equipment selections, and reduce the incidence of work-related injuries related to patient handling tasks.

The implementation of a validated standardized Bedside Mobility Assessment Tool (BMAT) will help nurses identify appropriate lifting equipment and devices needed to ensure safe patient handling activities based on patient mobility assessments, and allow nursing staff to take a more active role in assessing and managing patient mobility.

Existing tools for assessing patient's mobility status are limited by the time, effort, and provider level needed to conduct the assessment (Boynton, T., et al., 2014). In addition, very few tools exist for conducting assessment on hospitalized patients' mobility. Therefore, Banner Health developed a validated Bedside Mobility Assessment Tool (BMAT) that addresses the limitations of currently existing tools, can be conducted daily at the bedside by a registered nurse, and identifies equipment and tools needed to safely handle and transfer the patient based on their mobility assessment level (Boynton, T., et al., 2014).

Clinical Leadership Theme

The clinical leadership themes this project initiative focuses on under forces of magnetism framework are Force 6: Quality of Care and Force 7: Quality Improvement.

Methodology

Implementing a change initiative can be very difficult to accomplish especially in the current complex healthcare environment. The key to successfully implementing the "Safe Patient Handling and No Lift Policy" project on the Medical-Cardiac IICU is the ability to identify problems and carry out planned change. In order to initiate the implementation of the validated standardized Bedside Mobility Assessment Tool, Lippitt's Phases of Change Theory were employed. Lippitt's (1958) Change Theory is a "seven phase model that examines the process of planned change and originates from Lewin's Three Step Change Theory: (1) unfreezing, (2)

moving, and (3) refreezing" (Geraci, E.P., 1997). The seven phases incorporated in Lippitt's change theory include the role of a change agent.

The first phase is assessing and diagnosing the problem. During this step, data collection and analysis was performed in order to accurately diagnose the extent of the problem within the Medical-Cardiac IICU. This first stage involved clearly identifying and clarifying the overall problem. This was done by assessing the hospital wide Nursing Cost Center FY2014 quarterly Safe Patient Handling Injury Report and determining the number of work related injuries, lost/restricted work days, and estimated ultimate hospital costs related to patient handling tasks. This internal data was compared with external data in the current literature to accurately diagnose the extent of the safe patient handling problem. In addition, a pre-survey self-report evaluation given to nursing staff was conducted to assess the need for safe patient handling quality improvement and assess nursing staff's current knowledge on safe patient handling practices on the Medical-Cardiac IICU.

The second phase involved assessing the motivation and capacity for the proposed change. This stage encompassed the process of the change, accurately assessed the system and the staff involved in the change, and included an assessment of the resources available for initiating the change (Geraci, E.P., 1997). The second phase was established by conducting a root cause analysis to determine the components contributing to the insufficient use of lift equipment and Lift Team, and incidence of work-related injuries among nursing staff on the Medical-Cardiac IICU. During this step, the data collected from the pre-survey self-report evaluations and the root-cause analysis were analyzed and presented to management. This phase established sufficient commitment from staff as well as administration to carry out the change. The third phase of planned change involved assessing the change agent's motivation and

resources. This stage identified a change agent that will be responsible for implementing the proposed change (Geraci, E.P., 1997). The third phase was established by seeking out key stakeholders for the "Safe Patient Handling and No Lift Policy" project implementation including the safe patient handling unit champions, clinical nurse specialist (CNS), assistant patient care manager (APCM), and the unit manager. In addition, a cost analysis was conducted to determine the direct and indirect costs associated with insufficient use of mechanical lift equipment and/or team. The hospital costs associated with work related injuries related to patient handling tasks were evaluated and it was determined that the implementation of a validated Bedside Mobility Assessment Tool (BMAT) on the Medical-Cardiac IICU into daily practice by nursing services personnel would result in a significant financial gain with minimal implementation costs.

The fourth phase of planned change involved defining the progressive stages of change and selecting change objectives (Geraci, E.P., 1997). This phase included organizing and anticipating the plan of change as well as gathering data from the current literature. The fourth phase was established by conducting a thorough literature review on evidence-based practices related to safe patient handling and patient-provider safety. During this stage, a review of the literature revealed a validated Bedside Mobility Assessment Tool (BMAT) developed by Banner Health that was implemented on the Medical-Cardiac IICU (See Appendix F for Bedside Mobility Assessment Tool). The Bedside Mobility Assessment Tool instructed the nurses on how to guide the patient through a 4-step functional task list in order to identify the level of mobility the patient could achieve (Boynton, T., et al., 2014). The nurses then utilized the assessment to make a determination of the patient's level of mobility (e.g., Mobility Level 1). In addition to the Bedside Mobility Assessment Tool, a unit specific BMAT-Mobility Equipment

Options supplementary tool was created to help the nurses select and locate the appropriate lifting equipment and transferring devices available on the Medical-Cardiac IICU based on the patient's corresponding level of mobility (See Appendix G for unit specific BMAT-Mobility Equipment Options Tool). Upon completion of the assessment, the nurses documented the patient's mobility level in EPIC to ensure that the patient's mobility level status was current.

Phase five of Lippitt's change theory involved choosing the appropriate role and responsibility for the change agent. This is a critical step in the change process because failure to define the role of the change agent may result in miscommunication and confusion (Geraci, E.P., 1997). The fifth phase was established by creating a PowerPoint provided via email to educate the nursing staff on how to utilize the Bedside Mobility Assessment Tool and unit specific BMAT-Equipment Options Tool. In addition, education of the BMAT and unit specific Equipment Options Tool were reinforced during the daily morning and evening shift huddles, a copy of each tool was placed in the break room as a visual aid and reference for nursing staff, and management involvement was incorporated by supporting the need to utilize the Bedside Mobility Assessment Tool and unit specific Equipment Options Tool on admission, every shift, and with change in patient status during the weekly unit council meetings.

The sixth stage involved the maintenance of the proposed change once it had been initiated. The key to maintaining the change is continuous communication, implementation, evaluation, and modifications as needed (Geraci, E.P., 1997). The sixth stage was established by implementing communication tools to indicate the patient's current mobility status to all health care personnel that enter the patient's room. This was done by placing a color-coded sign next to the patient's communication board indicating his/her current mobility level (e.g. Red = Mobility Level 1; Orange = Mobility Level 2; Yellow = Mobility Level 3; Green = Mobility Level 4) (See

Appendix H for Communication Tools). The goal of the communication tools was to indicate the patient's current mobility level to all members of the health care team and subsequent staff during shift changes. In addition, the safe patient handling unit champions were identified to facilitate the sustainability of the Bedside Mobility Assessment Tool and unit specific Equipment Options Tool on the Medical-Cardiac IICU. Lastly, the seventh phase involved the permanent integration of the change initiative within the clinical setting (Geraci, E.P., 1997). Phase seven was established by administering a post-survey self-report evaluation to the nursing staff to determine the effectiveness of the BMAT implementation.

Data Source

The "Safe Patient Handling and No Lift Policy" project was implemented on the Medical-Cardiac IICU. This particular unit is a cardiac and medical IICU telemetry unit that provides continuous 24-hour cardiac telemetry monitoring with a focus on intermediate care for cardiac patients. This unit monitors patients post percutaneous coronary intervention (PCI) procedures, patients awaiting heart and/or lung transplantation, post-heart transplant rejection, post heart-lung transplant rejection, acute coronary syndrome (ACS), and heart failure (HF). The Medical-Cardiac IICU is considered a cardiac monitoring unit that utilizes electrocardiography to continuously monitor and assess patients' conditions relative to their cardiac rhythm.

The Medical-Cardiac IICU acted as the pilot unit for the implementation of the validated Bedside Mobility Assessment Tool developed by Banner Health and the unit specific Equipment Options Tool. The nursing staff on this unit consists of registered nurses (RNs) and certified nursing assistants (NAs). The patient to nurse ratio is typically 3:1, depending on patient acuity, but can be limited to a 2:1 ratio with advanced care and/or total dependent patients. The nursing staff on the Medical-Cardiac IICU plays an important role within the interdisciplinary team and

continuously communicates with physicians, specialists (i.e. cardiologists, neurologists, surgeons, etc.), pharmacy, respiratory therapists, and critical care specialists. The unit culture amongst health care providers on the Medical-Cardiac IICU facilitates teamwork, support and collaboration in order to deliver optimal care to their patients.

The project initiative focused on increasing the use of mechanical lift equipment and Lift Team during patient handling activities among nursing staff by comparing the results of the pre- and post-intervention self-report survey tool. The survey tool provided immediate feedback on the effectiveness of the standardized Bedside Mobility Assessment Tool and unit specific Equipment Options Tool in regards to patient handling tasks. The collection and analysis of these data sources was essential in determining whether safe patient handling activities using a standardized Bedside Mobility Assessment Tool and unit specific Equipment Options Tool is an effective method of increasing the use of mechanical lift equipment and Lift Team among nursing staff.

Timeline

A complete timeline for the development and implementation of the "Safe Patient Handling and No Lift Policy" initiative was constructed to maximize positive outcomes. The Medical-Cardiac IICU nursing staff was surveyed pre-intervention and post-intervention to evaluate the effectiveness of the standardized Bedside Mobility Assessment Tool and unit specific Equipment Options Tool. Pre-survey self-report evaluations were distributed for two weeks during October (10/13/14 – 10/24/14) to Day Shift and Night Shift Registered Nurses (RNs) and Nursing Assistants (NAs). The results from the pre-survey self-report evaluation were collected from October 24, 2014 to October 26, 2014. The data collected was presented to management on October 27, 2014 and introduction of the validated Bedside Mobility

Assessment Tool and unit specific Equipment Options Tool to staff began on November 3, 2014 to allow for a familiarization period before integration into daily practice on the unit. On November 10, 2014, implementation of the BMAT and unit specific Equipment Options Tool was incorporated into daily practice on the Medical-Cardiac IICU. A post-intervention self-report survey was distributed from November 17, 2014 to November 19, 2014 to determine the effectiveness of the standardized Bedside Mobility Assessment Tool. The post-intervention self-report survey results were collected and analyzed on November 20, 2014. Comparisons were made between the pre-survey self-report evaluations and the post-survey self-report evaluations to determine the effectiveness of the intervention and whether or not there was an increase in the use of mechanical lift equipment and/or Lift Team among nursing staff. The "Safe Patient Handling and No Lift Policy" initiative was presented to the Leadership and Research Council on December 2, 2014. The USF Poster Presentation took place on December 10, 2014. A final evaluation of the project can successfully be done at the end of December 2014 during the hospital wide Nursing Cost Center FY2014 Safe Patient Handling Quarterly Injury Report to determine if the Medical-Cardiac IICU maintained a reported injury rate of zero after the project initiative was implemented.

Results

The pre-survey self-report evaluation was distributed to 44% of the total Registered Nurses (RNs) and 37% of the total Nursing Assistants (NAs) on the Medical-Cardiac IICU (See Appendix D [Figure 1 & Figure 2] for Percentage of RNs and NAs Pre-Surveyed). The pre-survey self-report evaluation results for the registered nurses indicated an underutilization of patient lifting and transferring devices, a lack of understanding of how to select appropriate lifting equipment and transferring devices based on patient assessment, a lack of understanding

of how to utilize patient lifting and transferring devices, and belief that coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.

Of the 44% total RNs surveyed: 38.7% strongly agreed and 38.7% agreed to utilizing patient lifting and transferring devices whenever possible; 48.4% strongly agreed and 45.2% agreed to understanding how to select appropriate lifting equipment and transferring devices based on patient assessment; 42.0% strongly agreed and 54.8% agreed to understanding how to utilize patient lifting and transferring devices, and 64.5% strongly agreed and 12.8% agreed that coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff (See Appendix D [Table 4] for Five Point Likert Scale Pre-Survey Results for Registered Nurses).

Of the 37% total NAs surveyed: 100% strongly agreed to utilizing patient lifting and transferring devices whenever possible; 66.7% strongly agreed and 33.3% agreed to understanding how to select appropriate lifting equipment and transferring devices based on patient assessment; 100% strongly agreed to understanding how to utilize patient lifting and transferring devices; and 66.7% strongly agreed and 33.3% agreed that coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff (See Appendix D [Table 5] for Five Point Likert Scale Pre-Survey Results for Nursing Assistants). (See Appendix E for comprehensive Safe Patient Handling Registered Nurses (RNs) and Nursing Assistants (NAs) Pre-Survey Results).

In addition, barriers to utilizing the lift equipment and Lift Team were identified. RN barriers to utilizing the lift equipment included: time (47%), room setup (18%) and equipment unavailable/location (10%). NA barriers to utilizing the lift equipment included: time (67%) and 33% reported no barriers. Moreover, RN barriers to utilizing the Lift Team included: time (33%),

availability (12%), scheduling (12%), and misunderstanding of the Lift Team's role (5%). NA barriers to utilizing the Lift Team included: time (67%) and 33% reported no barriers. (See Appendix D [Figure 4-7] for RN and NA Barriers to Utilizing Lift Equipment and Team).

Based on these results, a validated standardized Mobility Assessment Tool (BMAT) for nurses developed by Banner Health and a unit specific Equipment Options Tool was implemented on the Medical-Cardiac IICU. After a two-week implementation period, a post-survey self-report evaluation was distributed to 48% of the original pre-surveyed RNs to evaluate the effectiveness of the BMAT and unit specific Equipment Options Tool. The pre-survey self-report evaluation results were compared to the post-survey self-report evaluation results and the greatest percent change (> 10%) was analyzed. Of the ten pre-survey and post-survey questions administered, five (Questions 1, 5, 6, 7 and 10) revealed a greater than 10% change. (See Appendix I [Table 7] for Safe Patient Handling Post-Survey Results).

The pre- and post- intervention survey results revealed an increased understanding that musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients (strongly agree: 18.3% change); increased utilization of patient lifting and transferring devices (strongly agree: 14.6% change); increased understanding of how to select appropriate lifting equipment and transferring devices based on patient assessment (strongly agree: 18.3% change); increased understanding of how to utilize patient lifting and transferring devices (agree: 11.9% change); and increased belief that coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff (agree: 40.5% change) (See Appendix I [Table 8] for Pre-Survey & Post-Survey Greatest Percent Change (>10%). (See Appendix J for comprehensive Safe Patient Handling Pre- & Post-Survey Greatest Percent Change Results).

Limitations, Recommendations & Future Evaluation

The study was limited to a three-month period that resulted in a short implementation and post-intervention evaluation phase. Post-survey self-report evaluations were distributed to 48% of the original registered nurses pre-surveyed, and thus was a shortcoming to this study. Future recommendations of this study would include ensuring management and the identified safe patient handling unit champions facilitate the sustainability of the Bedside Mobility Assessment Tool and unit specific Equipment Options Tool on the Medical-Cardiac IICU. In addition, implementation of the BMAT and unit specific Equipment Options Tool can be enhanced with focus groups and/or audits to help identify problems nurses have with conducting and documenting the mobility assessment and following through on using recommended safe patient handling equipment. Moreover, incorporating these tools into EPIC would help guide the nurse through the mobility assessment levels and, based on responses, recommend appropriate safe patient handling equipment options. A final evaluation of the project can successfully be done at the end of December 2014 during the hospital wide Nursing Cost Center FY2014 Safe Patient Handling Quarterly Injury Report to determine if the Medical-Cardiac IICU maintained a reported injury rate of zero.

Conclusion

The primary results of adopting the validated standardized Bedside Mobility Assessment Tool (BMAT) and unit specific Equipment Options Tool for nurses into daily practice on the Medical-Cardiac IICU was an increased utilization of patient lifting and transferring devices and an increased understanding of how to select appropriate lifting equipment and transferring devices based on patient assessment. In addition, the nursing staff indicated an increased understanding of how to utilize patient lifting and transferring devices, an increased

understanding that musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients, and an increased belief that coordinating with the Lift Team would be helpful for staff. As a result, the "Safe Patient Handling and No Lift Policy" project initiative increased the use of mechanical lift equipment among nursing staff, and thus decreased the risk of work-related injuries. Although this study did not indicate an increased utilization of the Lift Team during the project timeline, it is expected that future evaluation will indicate an increased utilization of lift equipment and team, and a sustained decrease in reported injuries, number of lost/restricted work days, and hospital costs related to patient handling activities.

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Appendix A

Hospital Wide Nursing Cost Center Safe Patient Handling Injury Report

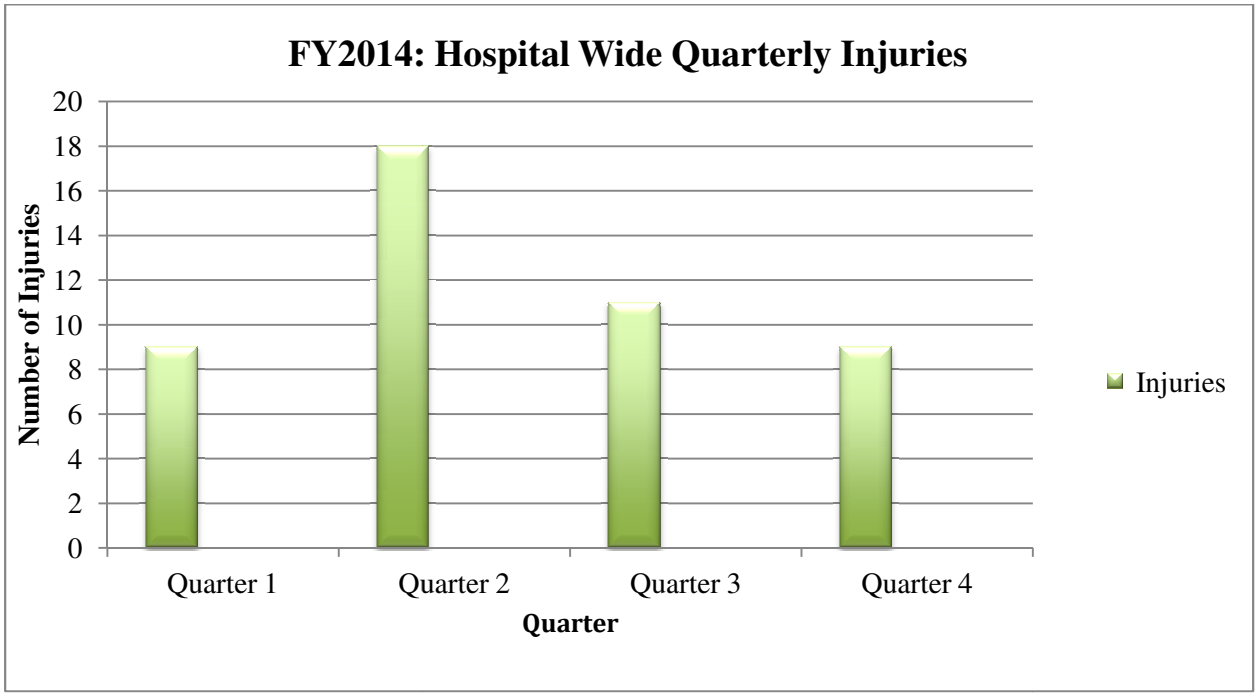


Table 1: Hospital Wide FY2014 Quarterly Injuries (January – October 2014 [Quarter 4 Incomplete]

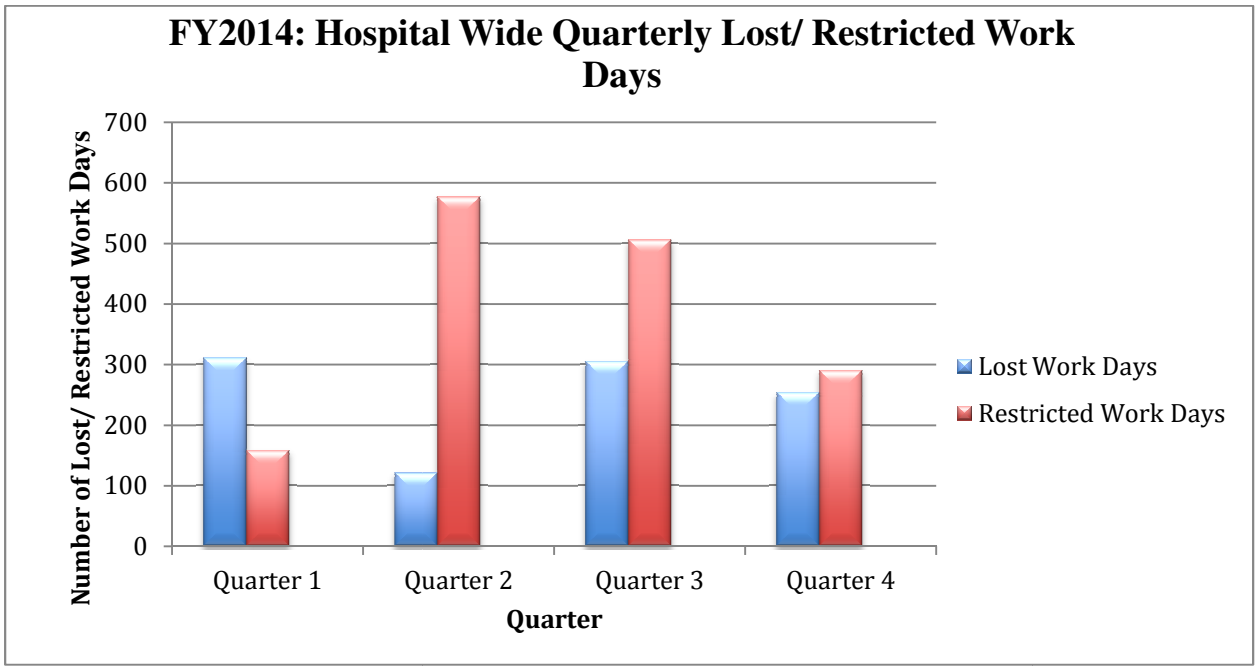


Table 2: Hospital Wide FY2014 Quarterly Lost/ Restricted Work Days (January – October 2014) [Quarter 4 Incomplete]

Hospital Wide Nursing Cost Center Safe Patient Handling Injury Report

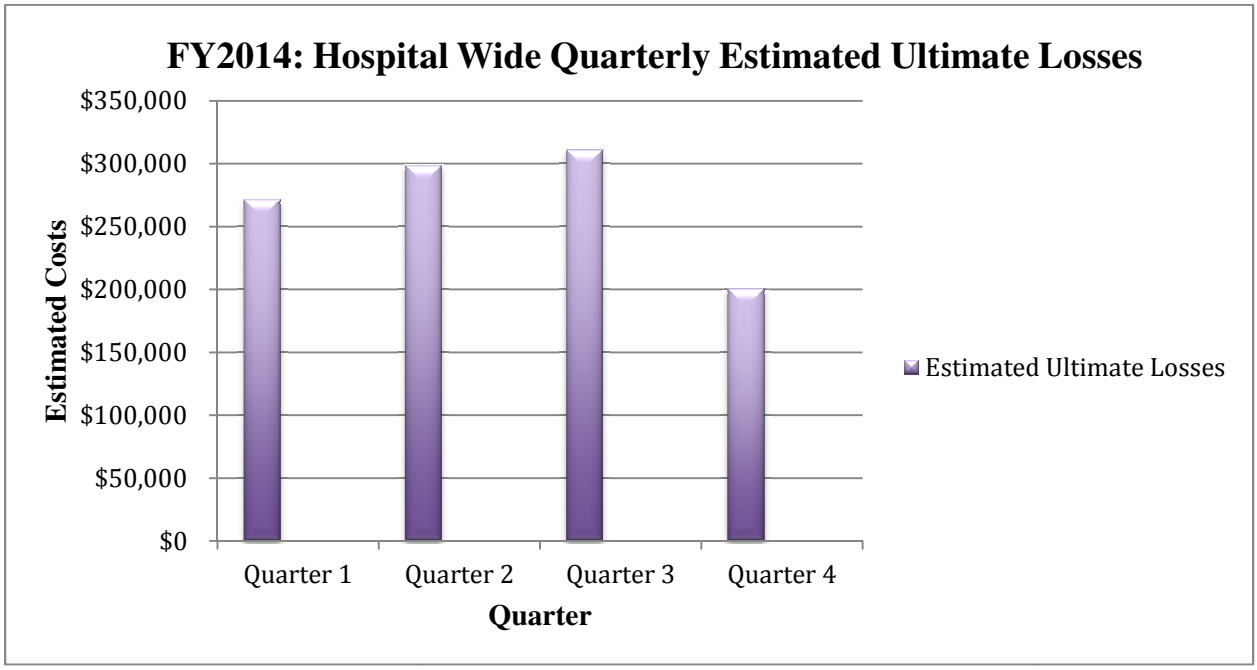
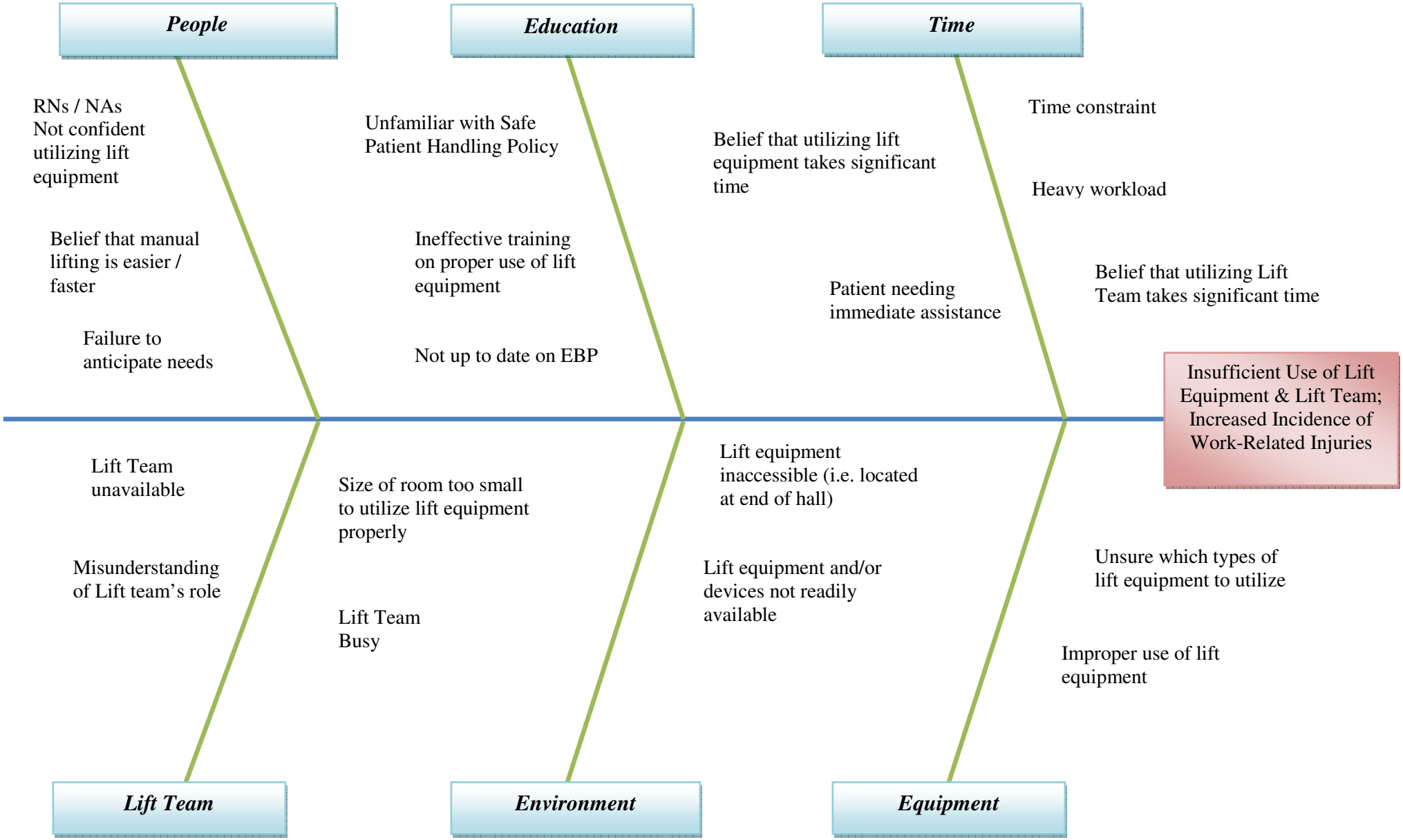


Table 3: Hospital Wide FY2014 Quarterly Estimated Ultimate Losses (January – October 2014) [Quarter 4 Incomplete]

Appendix B


People
Education
Time
RNs / NAs
Not confident
utilizing lift
equipment
Belief that manual
lifting is easier /
faster
Failure to
anticipate needs
Unfamiliar with Safe
Patient Handling Policy
Ineffective training
on proper use of lift
equipment
Not up to date on EBP
Belief that utilizing lift
equipment takes significant
time
Patient needing
immediate assistance
Time constraint
Heavy workload
Belief that utilizing Lift
Team takes significant time
Insufficient Use of Lift Equipment & Lift Team; Increased Incidence of Work-Related Injuries
Lift Team
unavailable
Misunderstanding
of Lift team's role
Size of room too small
to utilize lift equipment
properly
Lift Team
Busy
Lift equipment
inaccessible (i.e. located
at end of hall)
Lift equipment and/or
devices not readily
available
Unsure which types of
lift equipment to utilize
Improper use of lift
equipment
Lift Team
Environment
Equipment

Appendix C

Safe Patient Handling Pre- and Post-Survey

All responses are anonymous. Please indicate one answer that fits best.

	Question	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
1	Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients.					
2	I understand how to minimize injury during lifting and transfers.					
3	Patient lifting and transferring devices are readily available for me to use.					
4	I know where patient lifting and transferring devices are located on my unit.					
5	I utilize patient lifting and transferring devices whenever possible.					
6	I understand how to select appropriate lifting equipment and transferring devices based on patient assessment.					
7	I understand how to utilize patient lifting and transferring devices.					
8	Use of mechanical lift equipment would be helpful in enhancing patient safety and reducing the incidence of work-related musculoskeletal pain and/or injury.					
9	I feel that time is an issue when utilizing patient lifting and transferring devices.					
10	Coordinating with Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.					

1) What are the barriers that prevent you from using the lift equipment?

2) What are the barriers that prevent you from using the Lift Team?

Appendix D

Safe Patient Handling Pre-Survey Results

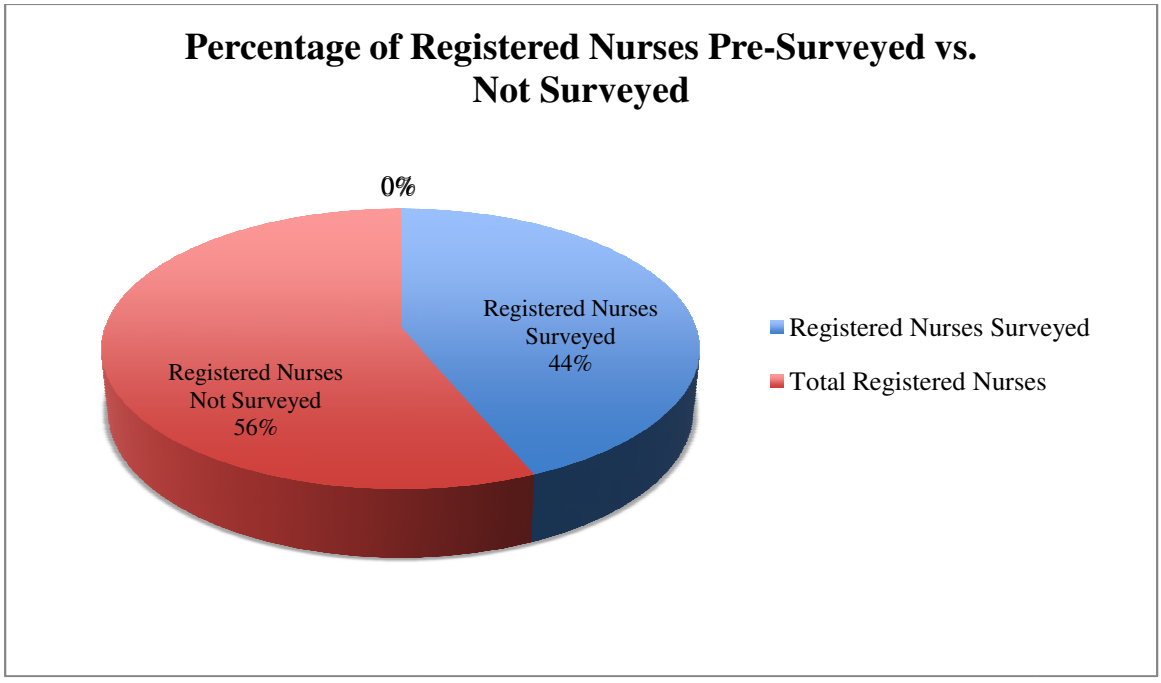


Figure 1: Pie Chart Comparing Percentage Of Registered Nurses Surveyed vs. Not Surveyed

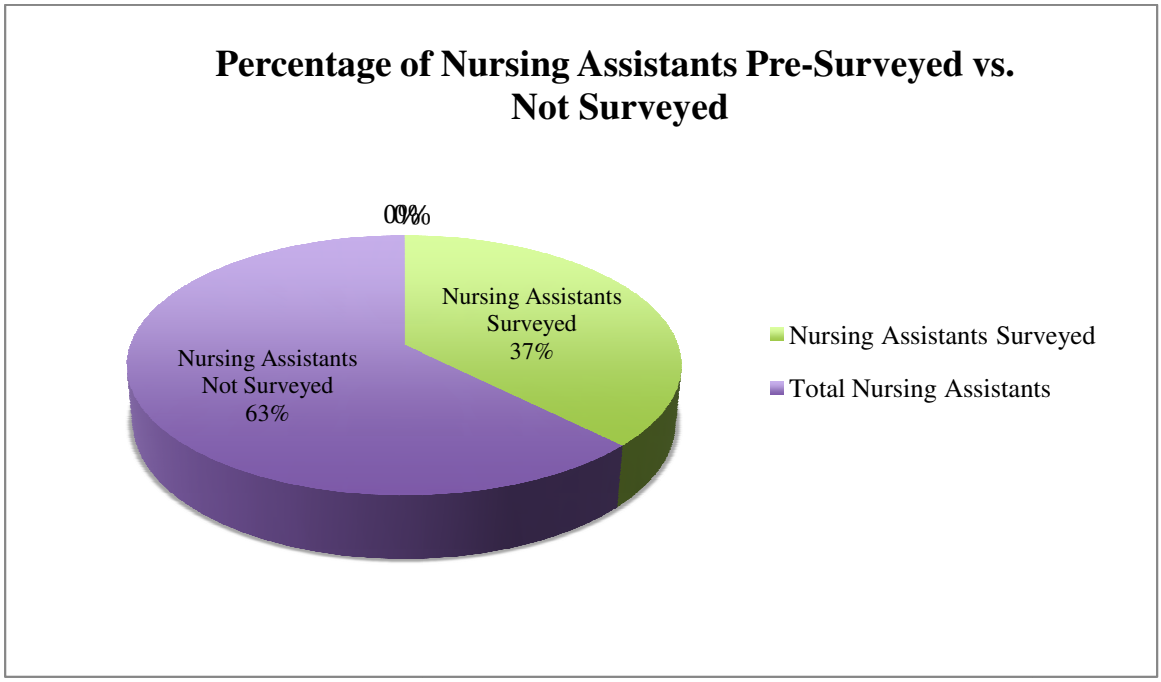


Figure 2: Pie Chart Comparing Percentage of Nursing Assistants Surveyed vs. Not Surveyed

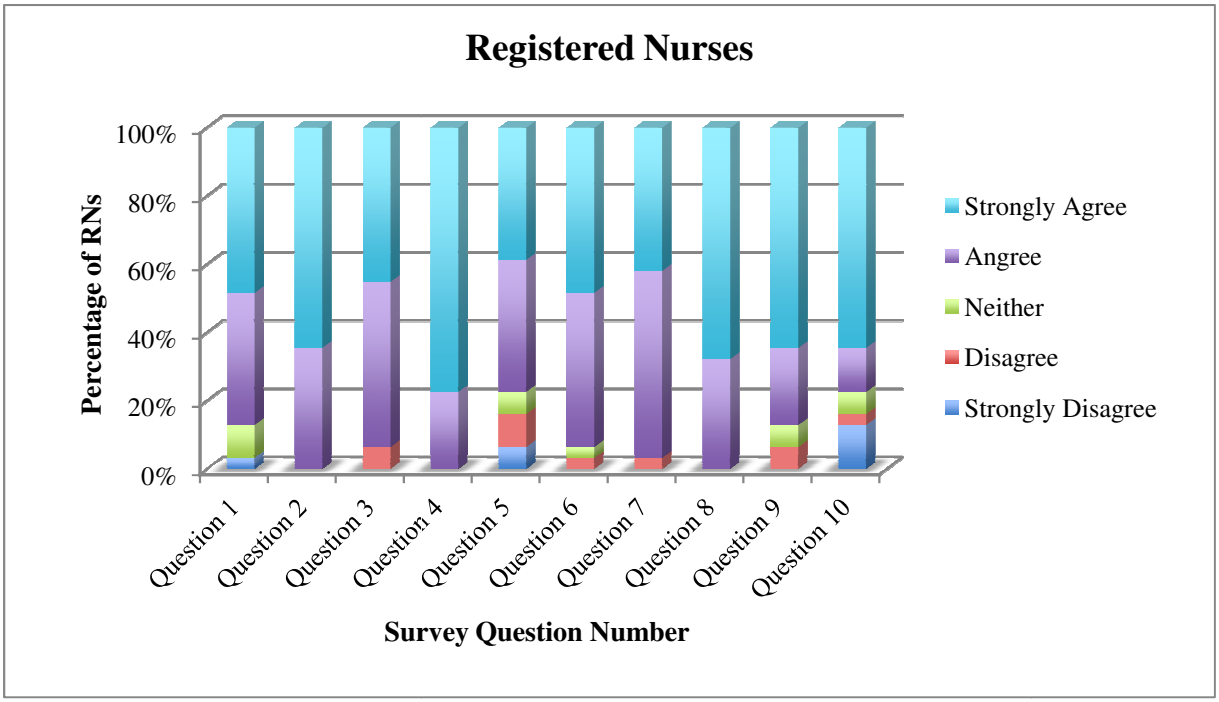


Table 4: Five Point Likert Scale: Pre-Survey Results For Registered Nurses (RNs)

Safe Patient Handling Pre- Survey Questions

1. Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients.
2. I understand how to minimize injury during lifting and transfers.
3. Patient lifting and transferring devices are readily available for me to use.
4. I know where patient lifting and transferring devices are located on my unit.
5. I utilize patient lifting and transferring devices whenever possible.
6. I understand how to select appropriate lifting equipment and transferring devices based on patient assessment.
7. I understand how to utilize patient lifting and transferring devices.
8. Use of mechanical lift equipment would be helpful in enhancing patient safety and reducing the incidence of work-related musculoskeletal pain and/or injury.
9. I feel that time is an issue when utilizing patient lifting and transferring devices.
10. Coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.

Figure 3: Safe Patient Handling Pre-Survey Questions
[Pre-Survey Questions administered to both RNs and NAs]

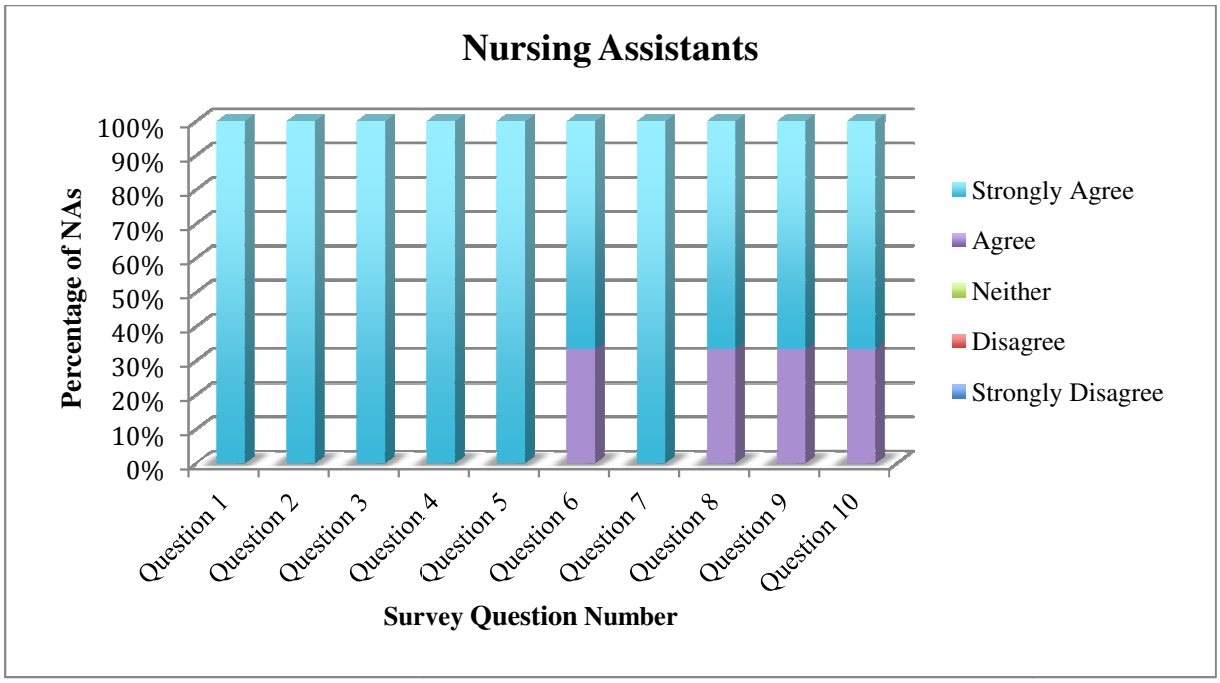


Table 5: Five Point Likert Scale: Pre-Survey Results for Nursing Assistants (NAs)

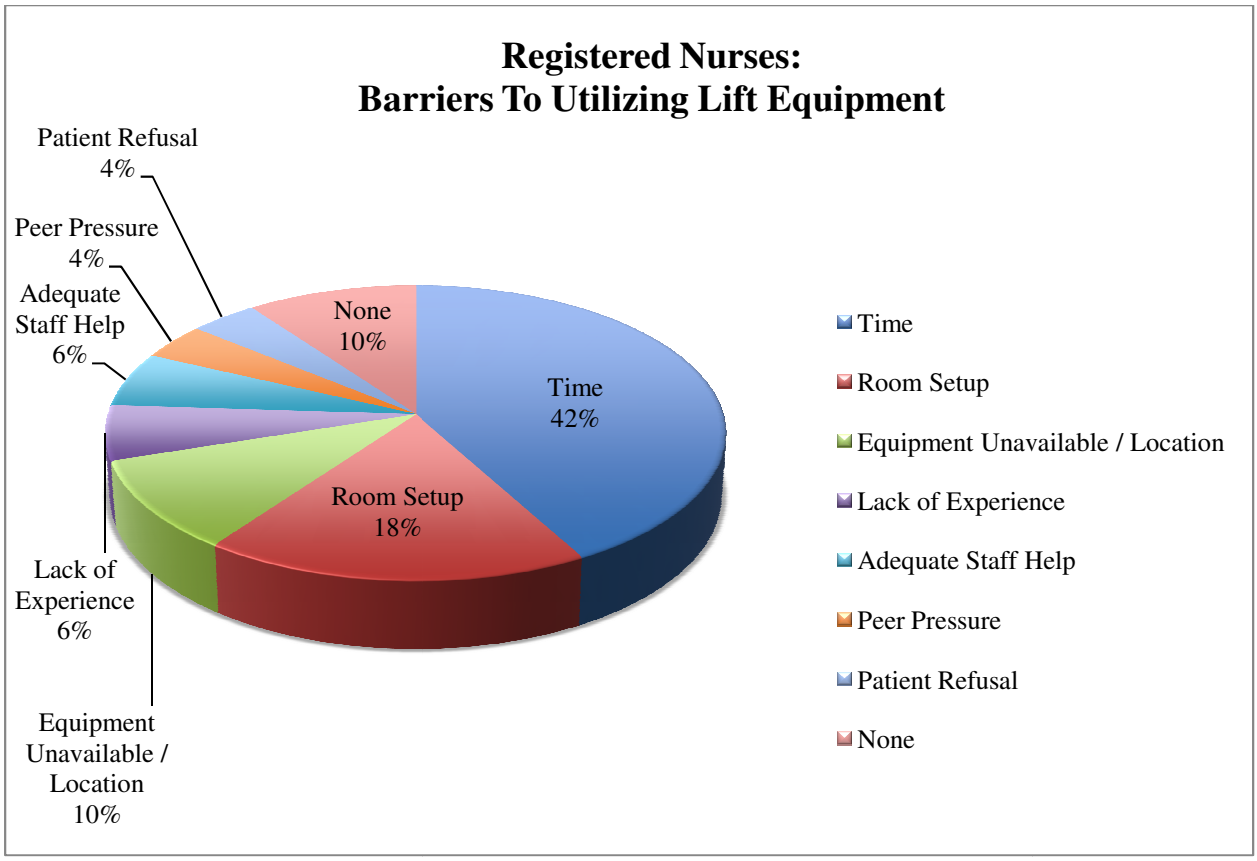


Figure 4: Pie Chart Illustrating Identified Registered Nurses Barriers To Utilizing Lift Equipment

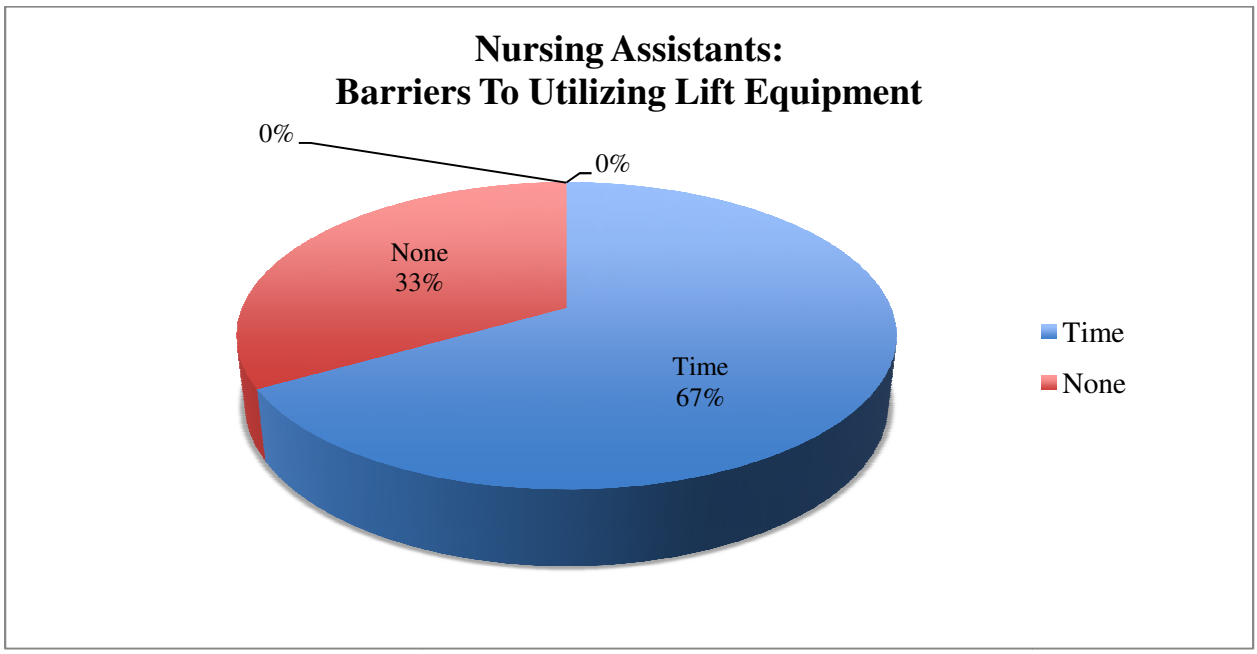


Figure 5: Pie Chart Illustrating Identified Nursing Assistants Barriers To Utilizing Lift Equipment

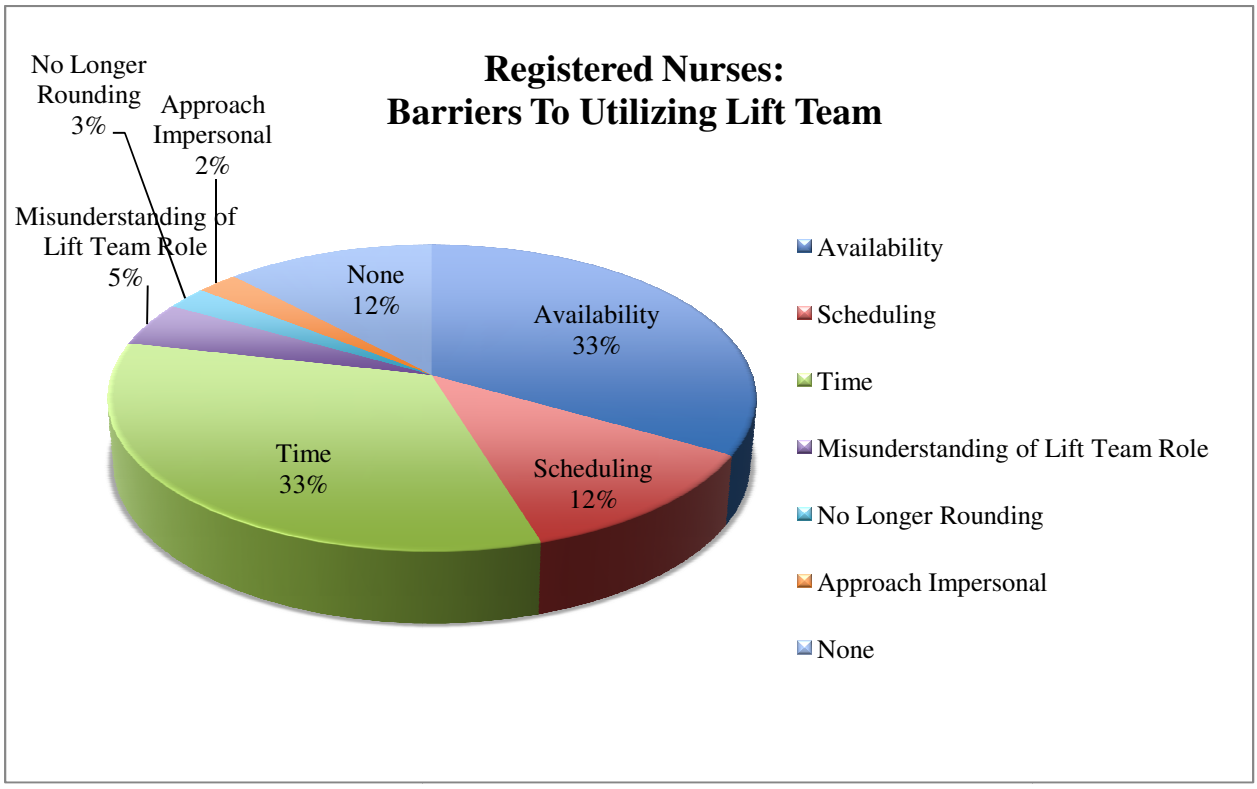


Figure 6: Pie Chart Illustrating Identified Registered Nurses Barriers To Utilizing Lift Team

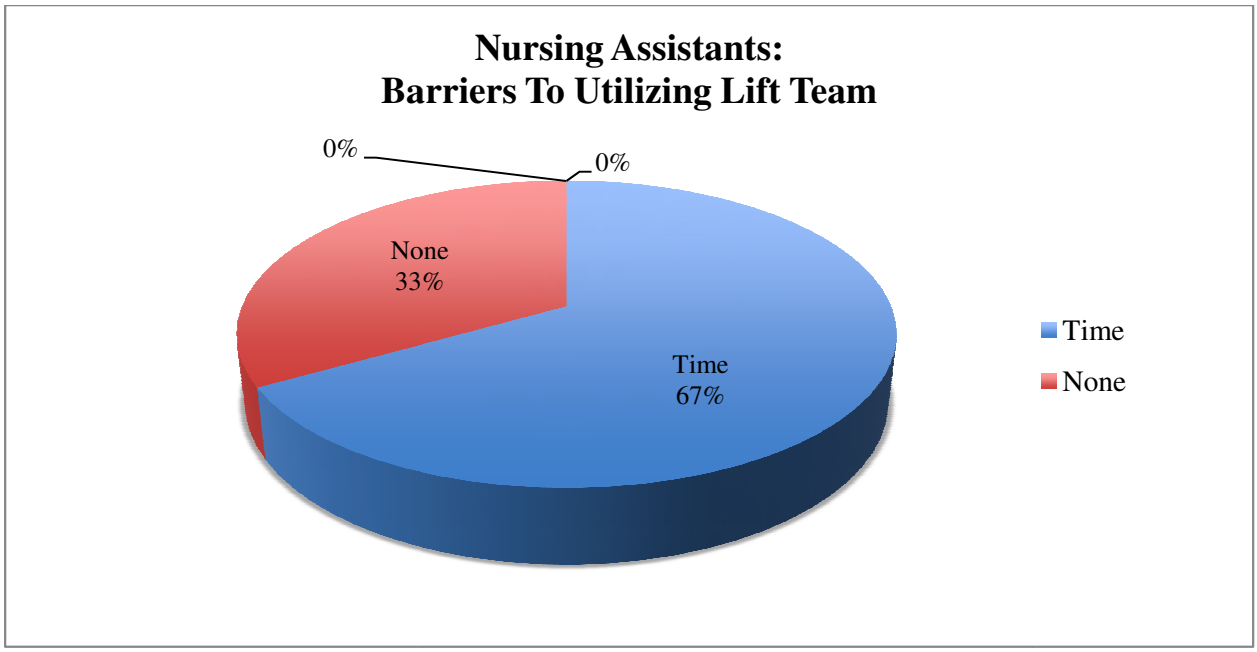


Figure 7: Pie Chart Illustrating Identified Nursing Assistants Barriers To Utilizing Lift Team

Appendix E

Safe Patient Handling Pre-Survey Results

	Question	Registered Nurses (RNs)	Nursing Assistants (NAs)
1	Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients.	Strongly Agree: 48.4% Agree: 38.7% Neither: 9.7% Disagree: 0% Strongly Disagree: 3.2%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%
2	I understand how to minimize injury during lifting and transfers.	Strongly Agree: 64.5% Agree: 35.5% Neither: 0% Disagree: 0% Strongly Disagree: 0%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%
3	Patient lifting and transferring devices are readily available for me to use.	Strongly Agree: 45.2% Agree: 48.4% Neither: 0% Disagree: 6.4% Strongly Disagree: 0%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%
4	I know where patient lifting and transferring devices are located on my unit.	Strongly Agree: 77.4% Agree: 22.6% Neither: 0% Disagree: 0% Strongly Disagree: 0%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%
5	I utilize patient lifting and transferring devices whenever possible.	Strongly Agree: 38.7% Agree: 38.7% Neither: 6.5% Disagree: 9.6% Strongly Disagree: 6.5%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%

Table 6: Safe Patient Handling Registered Nurses (RNs) and Nursing Assistants (NAs) Pre-Survey Results

Safe Patient Handling Pre-Survey Results

	Question	Registered Nurses (RNs)	Nursing Assistants (NAs)
6	I understand how to select appropriate lifting equipment and transferring devices based on patient assessment.	Strongly Agree: 48.4% Agree: 45.2% Neither: 3.2% Disagree: 3.2% Strongly Disagree: 0%	Strongly Agree: 66.7% Agree: 33.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%
7	I understand how to utilize patient lifting and transferring devices.	Strongly Agree: 42.0% Agree: 54.8% Neither: 0% Disagree: 3.2% Strongly Disagree: 0%	Strongly Agree: 100% Agree: 0% Neither: 0% Disagree: 0% Strongly Disagree: 0%
8	Use of mechanical lift equipment would be helpful in enhancing patient safety and reducing the incidence of work-related musculoskeletal pain and/or injury.	Strongly Agree: 67.7% Agree: 32.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%	Strongly Agree: 66.7% Agree: 33.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%
9	I feel that time is an issue when utilizing patient lifting and transferring devices.	Strongly Agree: 64.5% Agree: 22.5% Neither: 6.5% Disagree: 6.5% Strongly Disagree: 0%	Strongly Agree: 66.7% Agree: 33.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%
10	Coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.	Strongly Agree: 64.5% Agree: 12.8% Neither: 6.5% Disagree: 3.2% Strongly Disagree: 13.0%	Strongly Agree: 66.7% Agree: 33.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%

Table 6 (cont.)*:* Safe Patient Handling Registered Nurses (RNs) and Nursing Assistants (NAs) Pre-Survey Results

Appendix F

MAT – Mobility Assessment Tool for Nurses

Test	Function	Functional Competence	Fail= Choose Most Appropriate Equipment/Device(s)	Pass
Assessment Level 1 Assessment of: • Cognition • Trunk strength • Seated balance	**Sit and Shake**: From a semireclined position, ask the patient to sit upright and rotate* to a seated position at the side of the bed. Note the patient's ability to maintain bedside position. Ask patient to reach out and grab your hand, then pull forward toward your hand—making sure patient reaches across his/her midline. **if needed, use slider sheet/tube sheet to make it easier for patient to rotate to side of bed; then complete evaluation.*	**Sit:** Patient is able to follow commands and has some trunk strength; caregivers may be able to try weight bearing if patient is able to maintain seated balance greater than 2 minutes (without caregiver assistance). **Shake:** Patient has significant upper body strength, awareness of body in spaces, and grasp strength.	**MOBILITY LEVEL 1** • Use total lift with sling and/or repositioning sheet and/or straps. • Use lateral transfer devices such as roll board, slide sheets/tube, or air-assisted device. *NOTE: If your patient has "strict bed rest" or "non–weight bearing" restrictions, **do not proceed** with the assessment; **patient is MOBILITY LEVEL 1**.*	Passed Assessment Level 1=Proceed with Assessment Level 2.
Assessment Level 2 Assessment of: • Lower extremity strength • Stability	**Kick and Point**: With patient in seated position at the side of the bed, have patient place both feet on the floor (or stool) with knees no higher than hips. Ask patient to extend knee, then bend the ankle/flex and point the toes. Repeat on the opposite side.	Patient exhibits lower extremity stability, strength, and control.	**MOBILITY LEVEL 2** • Use total lift for patient unable to bear weight on one leg. • Use sit-to-stand lift for patient who can bear weight on at least one leg.	Passed Assessment Level 2=Proceed with Assessment Level 3.
Assessment Level 3 Assessment of: • Lower extremity strength for standing	**Stand**: Ask the patient to elevate off the bed or chair (seated to standing) using an assistive device (eg, cane, railing). Patient should be able to raise buttocks off bed and hold for a count of five. Patient may repeat once.	Patient exhibits upper and lower extremity stability and strength.	**MOBILITY LEVEL 3** • Use nonpowered raising/stand aid. • Use total lift with master vest with lift. • Use assistive device (cane, walker, crutches) *NOTE: Patient passes level 3 assessment **but requires assistive device** to ambulate; standby and set-up assistance required for ambulation; **patient is MOBILITY LEVEL 3.*** • May use gait belt to help steady and guide movement **NOT to lift**, ie, patient is capable of ambulation with or without assistive device but is otherwise unsteady.	Passed Assessment Level 3 **AND no assistive device needed**=Proceed with Assessment Level 4.
Assessment Level 4 Assessment of: • Standing balance • Gait	**Walk:** Ask the patient to march in place at bedside. Then ask the patient to advance step and return each foot. Note: There are ortho and neuro conditions that might render a patient unable to step backward; use your best clinical judgment.	Patient exhibits steady gait and good balance while marching, and when stepping forwards and backwards. Patient can maneuver necessary turns for in-room mobility.	**MOBILITY LEVEL 3** If patient shows signs of unsteady gait or **Fails Assessment Level 4,** refer back to **MOBILITY LEVEL 3– *(patient is MOBILITY LEVEL 3)***.	**MOBILITY LEVEL 4** MODIFIED INDEPENDENCE **Passed–No assistance needed to ambulate**; use your best clinical judgment to determine need for supervision during ambulation, as well as need to use a **gait belt**.

Always default to the safest lifting/transfer method (eg, total lift) if there is any doubt in the patient's ability to perform the task.

Figure 8: B.M.A.T. – Bedside Mobility Assessment Tool (Boynton, T., et al., 2014)

Appendix G

BMAT – Equipment Options Tool

Mobility Level 1	Mobility Level 2	Mobility Level 3	Mobility Level 4
 Golvo (Back Hallway)  Viking (Clean Utility Room)  Handy Sheets / Tube (Clean Utility Room)	 Sabina (Back Hallway)  Handy Sheets/ Tube (Clean Utility Room)	 Steady (Back Hallway)  Handy Sheets/ Tube (Clean Utility Room)	**NO EQUIPMENT REQUIRED** STAFF MAY USE ANY LEVEL 3 EQUIPMENT FOR SAFETY AS NEEDED.  **REMIND THE PATIENT TO "CALL DON'T FALL"**

Figure 9: BMAT – Unit Specific Equipment Options Tool (Reference: Boynton, T., et al., 2014)

Appendix H

B.M.A.T Color-Coded Communication Signs

Appendix I

Safe Patient Handling Post-Survey Results

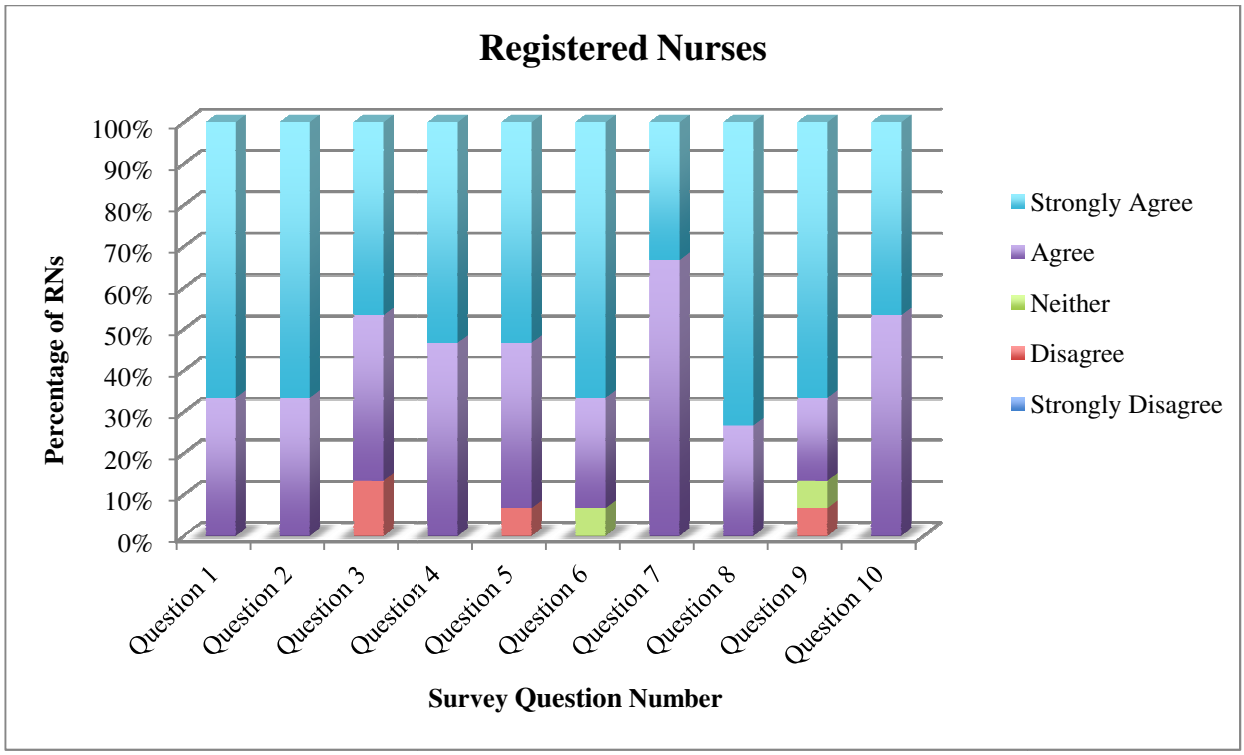


Table 7: Five Point Likert Scale: Post-Survey Results For Registered Nurses (RNs)

Safe Patient Handling Pre- & Post- Survey Questions

1. Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients.
2. I understand how to minimize injury during lifting and transfers.
3. Patient lifting and transferring devices are readily available for me to use.
4. I know where patient lifting and transferring devices are located on my unit.
5. I utilize patient lifting and transferring devices whenever possible.
6. I understand how to select appropriate lifting equipment and transferring devices based on patient assessment.
7. I understand how to utilize patient lifting and transferring devices.
8. Use of mechanical lift equipment would be helpful in enhancing patient safety and reducing the incidence of work-related musculoskeletal pain and/or injury.
9. I feel that time is an issue when utilizing patient lifting and transferring devices.
10. Coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.

Figure 3: Safe Patient Handling Survey Questions
[Post-Survey Questions administered to RNs only]

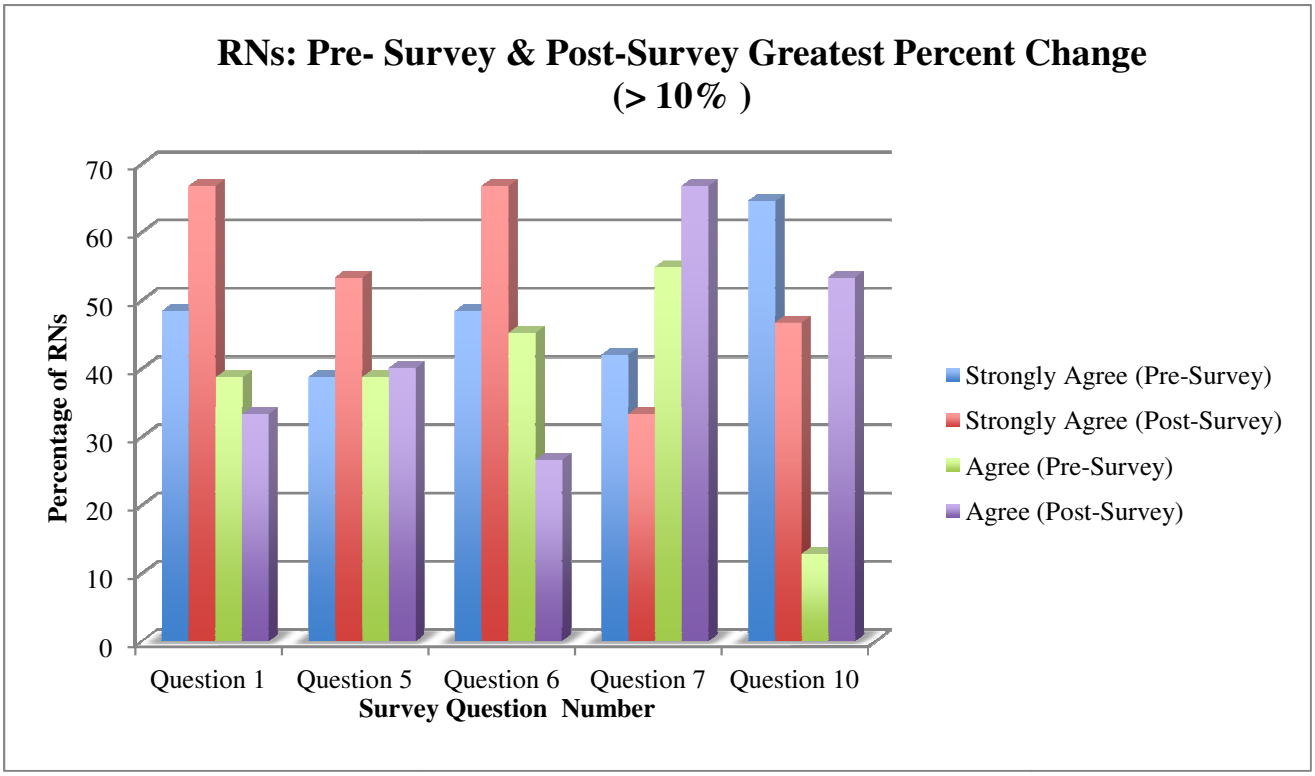


Table 8: RNs: Pre-Survey & Post-Survey Greatest Percent Change (> 10%)

Pre-Survey & Post-Survey Greatest Percent Change Questions (> 10%)
1. Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients. 5. I utilize patient lifting and transferring devices whenever possible. 6. I understand how to select appropriate lifting equipment and transferring devices based on patient assessment. 7. I understand how to utilize patient lifting and transferring devices. 10. Coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.

Figure 3: RNs: Safe Patient Handling Pre-Survey & Post-Survey Greatest Percent Change Questions (> 10%)

Appendix J

Safe Patient Handling Pre- & Post-Survey Greatest Percent Change Results (> 10%)

	Question	Pre-Survey (Registered Nurses)	Post-Survey (Registered Nurses)
1	Musculoskeletal pain and/or injuries can be avoided with proper lifting and transferring of patients.	Strongly Agree: 48.4% Agree: 38.7% Neither: 9.7% Disagree: 0% Strongly Disagree: 3.2%	Strongly Agree: 66.7% Agree: 33.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%
5	I utilize patient lifting and transferring devices whenever possible.	Strongly Agree: 38.7% Agree: 38.7% Neither: 6.5% Disagree: 9.6% Strongly Disagree: 6.5%	Strongly Agree: 53.3% Agree: 40% Neither: 0% Disagree: 6.7% Strongly Disagree: 0%
6	I understand how to select appropriate lifting equipment and transferring devices based on patient assessment.	Strongly Agree: 48.4% Agree: 45.2% Neither: 3.2% Disagree: 3.2% Strongly Disagree: 0%	Strongly Agree: 66.7% Agree: 26.6% Neither: 6.7% Disagree: 0 Strongly Disagree: 0%
7	I understand how to utilize patient lifting and transferring devices.	Strongly Agree: 42.0% Agree: 54.8% Neither: 0% Disagree: 3.2% Strongly Disagree: 0%	Strongly Agree: 33.3% Agree: 66.7% Neither: 0% Disagree: 0% Strongly Disagree: 0%
10	Coordinating with the Lift Team to schedule timelines for Safe Patient Lifts would be helpful for staff.	Strongly Agree: 64.5% Agree: 12.8% Neither: 6.5% Disagree: 3.2% Strongly Disagree: 13.0%	Strongly Agree: 46.7% Agree: 53.3% Neither: 0% Disagree: 0% Strongly Disagree: 0%

Table 9: RNs: Safe Patient Handling Pre- & Post- Survey Greatest Percent Change Results (> 10%)